Forest Restoration Workshop, Summary

The following is a brief summary of some of the main points presented and raised at the Cedar River Watershed Forest Restoration Workshop on July 18, 2004. Statements by presenters are shown in plain text. Questions or comments by participants are shown in **bold.** If there was a response to a question or comment that was recorded in our notes, it is summarized in plain text following a dash.

We are currently considering many of the comments in detail and will be following up with thorough responses in a few weeks. We are analyzing many of the key questions pertaining to the ecological thinning program. In particular, we are considering the issue of the spatial extent of the ecological thinning program and will present a detailed analysis based on ecological criteria and financial costs. We will be modifying the 700 Road Forest Habitat Restoration Plan both in response to comments raised at the workshop and to written comments received on the plan. Finally, we are currently devising a process to allow interested citizens to be involved proactively during future project planning.

Posters
Please see files posted on SPU website (http://www.seattle.gov/util/About_SPU/Water_System/Habitat_Conservation_Plan--HCP/Watershed_Management/UPLANDFOR_200405210949123.asp)

- Concepts of Forest Habitat Restoration in the Cedar River Watershed
- Restoration Thinning in the Cedar River Municipal Watershed
- 700 Road Forest Habitat Restoration Project
- A Technique for Prioritizing Forest Restoration Projects Based On Late-Seral Habitat Connectivity

Presentations
SPU Staff
Please see presentations posted on SPU website **(**http://www.seattle.gov/util/About_SPU/Water_System/Habitat_Conservation_Plan--HCP/Watershed_Management/UPLANDFOR_200405210949123.asp**)**:

- *Jim Erckmann* – Cedar River Watershed HCP and Forest Habitat Restoration Program Overview
- *Sally Nickelson* – Forest Habitat Restoration and Wildlife
- *Amy LaBarge* – Forest Habitat Restoration Strategies
- *Bill Richards* – Landscape Considerations: Project Site Selection and Prioritization

Invited Speakers
Jerry Franklin - Presentation

- Second-growth forests that generated after clearcutting are in many cases very different from naturally regenerated forests
- Old-growth forest
    - Has a "continual canopy" (foliage is present from the forest floor to the top of the tallest trees – from herbs, shrubs, intermediate canopy trees, and epicormic branching on old Douglas-fir trees)

    - Is "bottom loaded" (more foliage closer to the forest floor), compared to second growth, which is "top loaded" (most foliage is at the top of the upper tree canopy)
- Restoration of second-growth forests
    - Want spatial variability
    - Example: thinning a 40-60 year old forest can create structure at 77 years versus taking 180 years in an unthinned forest
    - Have used the concept of a three-legged stool for restoration: 1) structural retention, 2) restoration treatments to accelerate development, and 3) appropriate rotation length (note: the second applies to the CRMW)
    - Variable density thinning
        - Include skips and gaps
        - Cut some dominant and co-dominant trees to affect the light enough to affect forest structure
        - May remove more biomass in some cases than in a standard commercial thin
        - Leave deciduous trees, existing understory trees
        - Retain/create decadence, defect, deformities (the hardest thing to do)
        - Underplant, especially with shade tolerant tree species (cedar, hemlock, Pacific silver fir) – essential in many forests
    - Vary treatments!!! "Don't do the same thing everywhere!"
    - Don't thin too lightly – need to remove 40-50% of the basal area to accelerate development
    - Don't thin too heavily (e.g., to 50-60 trees per acre), especially if there's dense salal understory

Jerry Franklin – Responses to Questions/ Comments

- **What about subtraction of biomass by removing trees?** - Second-growth forest in this region does not lack biomass. Our stands are relatively rich in organic matter (important to rebuild soil structure). Thinning will just reallocate how organic matter is arrayed/displayed in forest structures.
- **Forests in the CRMW are not like forests Jerry has studied (mainly Wind River)**. – My model is not based on a single study site, but rather many different forests. There is an infinite array of developmental trajectories. Forest responses are site specific, but the general characteristics of vertical foliage continuity, bottom-loaded canopy and spatial heterogeneity are common to all old-growth forests.
- **What is the treatment option for stands older than 80 years?** - Likely underplanting, as well as the same variable density thinning systems used in younger stands.
- **What are the possibilities for restoring soil conditions? -** Input of organic material; Young stands are soil builders; Species diversity is important; Litter quality of deciduous species; Acidification under red alder.

Gordon Orians - Presentation

- We can't separate human values from the science
- There is a legacy of past abuses in the CRMW
- No management is a management decision

- We know much about commercial thinning, but relatively little yet about variable density thinning
- We should be doing interventions to learn; the CRMW provides a special opportunity that should be used to learn
- The CRMW needs to be clear on hypotheses, define knowledge gaps, monitoring needs, what can be learned
- Need to focus on an appropriate time frame to drive monitoring (identify what will happen more quickly, versus the very slow responses)
- Need to identify and question our assumptions – treat as hypotheses (including the graph of the potential benefits of treatment for habitat development that Jim showed)
- Low elevation forest is critically important for habitat. The CRMW is the only opportunity for significant amounts of low elevation old-growth in the Puget lowlands. Suggest focusing habitat restoration effort there.
- One size does not fit all. Some known science (discussed by Jerry) is applicable, but other areas may function differently
- All political decisions are interim
- All such intervention carries both a risk and a chance to do good. We need to weigh possible benefits against potential harm. An analogy that applies: taking medicine. Medicines may have undesired side effects, but we use them anyway because we believe there will be an overall benefit.

General Questions/ Comments (in bold) and responses

Budget/Money Issues

- **What are the budget/cost driven aspects of your management strategy?** – The treatment acreage defined in the HCP (2,000 acres over 50 years for ecological thinning) was cost driven, not the amount we considered ecologically necessary. It was simply the estimated amount we felt we could do with the cost-commitments in the HCP.
- **Will thinning pay for itself, or does the money go into the general budget?** – If any revenue is generated from an ecological thinning project, those revenues are used to offset the costs of the HCP. Budget authority can be requested to help pay for specific items, such as monitoring, cultural resource surveys, project administration, and/or special projects (e.g. forest certification), or it may just go to offset other HCP costs.
- **Is there a budget for ecologically thinning 62 acres per year?** – Yes, but the budget is limited (roughly $30,000 per year for just the cutting of trees, and additional funds for staff time for all planning, administration, cultural resources surveys, forest inventory data collection, monitoring, etc.).
- **Two concerns: follow the money, and the devil is in the details. There need to be some constraints in place.** – Selling trees to finance more restoration is admittedly a slippery slope, but we want the financial aspects of thinning projects to be transparent.
- **We need very solid policies for the sale of trees.**
- **We need to know exactly how any money made from sale of trees will be used. There needs to be rules developed as to the disposition of any money.**

Roads

- **What is your rationale for decommissioning 40% of the roads?** – We committed to removing about 236 miles of road in the HCP, based on an analysis of what roads we should eliminate for environmental reasons and what roads we concluded we should keep for facility access, fire suppression, surveillance, and access for restoration. We are currently reevaluating this target and may decommission even more. But we need to retain a core road system for security, to patrol and fight fires, access to research and restoration sites, etc.
- **Will any new roads be built**? – No, only temporary skid trails.
- **It's a bad idea to keep a road to a project that might be needed in 20 years.** – We agree, and we also recognize that there are maintenance costs to keeping roads open. If a road is not needed for 15-20 years, it will be abandoned. Not all roads can be abandoned after every thinning, however, as a road may still be needed for access to another area.

Number of Acres Treated with Ecological Thinning

- **If you ecologically thin more than 62 acres per year, you'll either need to get more money from the city council, or sell trees to help pay for the restoration. Where is the limit?** –The statement regarding funding is correct, and we could thin more acres by either funding mechanism. We do not currently have a maximum acreage that may be treated with ecological thinning. This is a policy decision that has not been made.
- **Doing ecological thinning on 2,000 acres over 50 years is a tiny fraction of the 71,500 acres second growth in the watershed**.
- **If 2,000 acres treated with ecological thinning are insufficient for habitat development, how much would be sufficient?** – We do not know exactly, but all the staff agree that it would be considerably greater than 2,000 acres.
- **There should be a reasonable upper limit on number of acres treated with ecological thinning. Stakeholders should be involved in this decision process, and it should be a public, transparent process.**
- **Some stakeholders may not be opposed to selling some trees and using the money for further restoration, but there needs to be clear guidelines, parameters that are set up now.**

General Ecological Thinning Comments

- **Will there be boundaries on prescriptions developed for ecological thinning (e.g., upper tree diameter limits)?**
- **We need to set up procedures now such that protections are in place for the future (when new staff are working). A public, transparent process will be required**.
- **What is a "conservative" prescription? It needs to be defined.**
- **Prescriptions not conservative enough – they should be limited to never cutting any "big" trees.**
- **Prescriptions are too conservative – they won't affect the habitat enough and you won't learn enough from them. You should experiment with thinning more heavily.**
- **You don't need to experiment. You can learn from what other landowners have done (e.g., failed thinnings that resulted in windthrow, a "carpet of hemlock").**
- **Second-growth forests created from clearcutting are on "natural" trajectories and don't need intervention.**

- **Second-growth forests created from clearcutting are already variable and don't need intervention.**
- **What is a "big" tree? Is it relative to what is present on the site or is there a fixed size of tree that should always be considered "big"?**

700 Road Forest Habitat Restoration Project

- **Why was the location of the 700 Road Forest Habitat Restoration Project chosen?** – The entire area around Chester Morse Lake was stripped clean by clearcutting. We are trying to provide habitat connectivity from the diverse riparian habitat that has developed around the lake and the upper elevation old-growth habitat in the Rex River basin.
- **Will cut trees on the 700 Road site be left as down wood?** Most will not be left because the existing volume of large diameter down wood on the site is very large (exceeds the highest volumes found in a very large study of naturally regenerated young, mature and old-growth in western Washington). We don't want to inhibit large mammal movement or understory development by leaving dense piles of down wood. However, we will leave the tops of trees used for snag creation, to assist in soil development.
- **Are trees removed for the skid trails included in the prescriptions for cut trees?** – Yes
- **The current prescriptions for the 700 Road project are not conservative enough. All "big" trees should be retained.**
- **If you cut too many "big" trees, and then there's a fire, they're all lost.**
- **Gaps should be created based on the sizes of gaps from natural disturbances (e.g., the windstorm from last December).**
- **There's a lot of down wood currently on the site, but should you provide more fresh wood to provide for the future? Hemlock will decay quickly, so would need to provide Douglas-fir or western redcedar.**
- **The learning objects for this project are not clear.**

Water Quality

- **What is the impact of restoration projects on water quality?** - Restoration projects are designed to protect water quality. Contract requirements are very strict and designed to protect water quality.
- The BPA right of way project was a significant disturbance (greater than any restoration project we will do) and had no effect on water quality. This was a result of strict contract compliance and enforcement by SPU staff.
- Old-growth structure is better for water quality than other forest structures. Old-growth forest is a better condensing surface for rain on snow events. It can better absorb run-off.
- Old-growth forest (with many canopy gaps) is more resistant to fire than dense continuous-canopy second-growth forest. Fire is potentially a major water quality issue, so fires will be suppressed in the watershed.

Tribal Issues

- **Past timber harvest has done away with the natural mix of species used by tribal people as a pharmacy, for spiritual areas, to support wildlife.**
- **Traditionally tribes burned areas to create openings for plants, wildlife.**

- **There is more wildlife in my back yard than I have seen in the second growth in the watershed.**
- **The Muckelshoot Indian Tribe supports active management to restore native plants and wildlife.**
- **You need to create openings to provide habitat diversity and support wildlife. Some larger gaps should be created (1/3 acre gaps are too small).**
- **You need to thin more than 2,000 acres.**
- **Science should be given priority over public opinion, city counsel concerns, or politics.**
- **Connectivity with other watersheds should be considered.**

Future Projects

- **How many ecological thinning projects are currently planned?** – Only the 700 Road Forest Habitat Restoration Project. We have some areas we are considering for future projects, but no plans are yet being developed.

Preservation of Knowledge

- **How is knowledge being preserved and how does it flow into adaptive management?** – We have systematic electronic documentation.

Brief Cautionary Comments

- **Follow the money**
- **The devil is in the details**
- **Do no harm**
- **Balance potential benefits with the risks**
- **You may not do any harm, but will you do any good?**
- **Doing nothing is an option.**
- **Disturbance, roads will increase weeds.**